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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

PATTON, SPENCER D

ART UNIT

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3664

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/768,156	Applicant(s) TAYLOR, SCOTT P.	
	Examiner SPENCER PATTON	Art Unit 3664	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>7/8/2008</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Receipt is acknowledged of the IDS filed 7/8/2008 which has been entered in the file. Claims 1-25 are pending.

Claim Objections

2. Claims 4, 7, 8, 15, 16 and 18 are objected to because of the following informalities:

Claim 4 states "wherein storing the coordinates comprises..." however storing the coordinates was not referred to in claim 1. It is suggested that Claim 4 be changed to be dependent upon claim 3.

Claims 7, 8, 15, 16, and 18, line 2, line 2, line 3, line 3, and second to last line respectively: "indicated" should be changed to --indicate--.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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4. **Claim 1** is rejected under 35 U.S.C. 102(e) as being anticipated by Hutchinson (US Patent No. 6,745,028).

Hutchinson teaches:

Re claim 1. A method for determining when a moving mobile platform will enter or exit at least one satellite coverage region, said method comprising:

determining a plurality of boundary coordinates that define a satellite coverage region perimeter (V_1 through V_6 , Figure 5; S4, Figure 8; and column 8, lines 13-15);

monitoring a position of the mobile platform as the mobile platform moves along a travel path (S3, Figure 8; and column 7, line 67 through column 8, line 1); and

determining the proximity of the mobile platform to the satellite coverage region perimeter (S28, Figure 9; numerator of equation 11 in column 9).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claims 2, 3, 5-8, 12, 14-16, 18, 19, 21, and 22** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hutchinson (US Patent No. 6,745,028) in view of Parkman (US Publication No. 2002/0168971).

Hutchinson teaches:

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Re claim 12. A system for determining when a moving mobile platform will enter or exit at least one satellite coverage region, said system comprising:

a navigational system (column 5, lines 38-49) on board the mobile platform adapted to monitor a position of the mobile platform as the mobile platform moves along a travel path; and

an on board server system (the inherent hardware and software) adapted to:

communicate with the database and the navigational system (column 5, lines 38-64); and

to determine the proximity of the mobile platform to the satellite coverage region perimeter (S28, Figure 9; numerator of equation 11 in column 9).

Re claim 18. A method for determining an approximate time of arrival of a mobile platform at one or more satellite coverage area boundaries, said method comprising:

determining a plurality of boundary coordinates that define a satellite coverage region perimeter (V_1 through V_6 , Figure 5; S4, Figure 8; and column 8, lines 13-15);

monitoring a position of the mobile platform as the mobile platform moves along a travel path (S3, Figure 8; and column 7, line 67 through column 8, line 1);

determining the proximity of the mobile platform to the satellite coverage region perimeter (S28, Figure 9; numerator of equation 11 in column 9); and

determining a time-to-boundary measurement of the mobile platform to indicated an approximate time until the mobile platform will arrive at the satellite coverage area boundary (S10, Figure 8).

Hutchinson fails to specifically teach: **(re claim 12)** a database adapted to store boundary coordinates that define a satellite coverage region perimeter; and **(re claims 18 and 3)** storing the boundary coordinates in a database accessible by a server system on board the mobile platform.

Parkman teaches, at Figure 4, a Region Map Data Base 68 which stores coverage regions of communications satellites so that a user can determine which coverage regions they are in.

In view of Parkman's teachings, it would have been obvious to one of ordinary skill in the art at the time of the invention to include, with the system as taught by Hutchinson, **(re claim 12)** a database adapted to store boundary coordinates that define a satellite coverage region perimeter; and **(re claims 18 and 3)** storing the boundary coordinates in a database accessible by a server system on board the mobile platform; since Parkman teaches a database as a useful method for storing satellite coverage regions.

Hutchinson additionally teaches:

Re claims 2 and 19. Wherein determining boundary coordinates comprises determining at least two of a latitude, a longitude and an altitude of a plurality of points that define the satellite coverage region perimeter (Hutchinson teaches that the cell center point is provided as a set of latitude and longitude coordinates at column 2, lines 34-41; and that the vertices of the cell are provided as coordinates based on the center

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position. Thus it would have been obvious to determine the vertices as latitude and longitude based on this information to determine the cell edges in relation to world coordinates.).

Re claims 5 and 21. Wherein monitoring a position of the mobile platform comprises periodically determining at least two of a latitude, a longitude and an altitude of the mobile platform as the mobile platform moves along the travel path (column 7, line 67 through column 8, line 1).

Re claims 6, 14, and 22. Wherein determining the proximity of the mobile platform to the satellite coverage region perimeter comprises periodically comparing the position of the mobile platform to the boundary coordinates (column 7, lines 6-12 teaches performing the calculations every 5 minutes; S28, Figure 9; and S10, Figure 8).

Re claims 7 and 15. Wherein the method further comprises determining a time-to-perimeter measurement of the mobile platform to indicated an approximate time that the mobile platform will remain within the satellite coverage region (S10, Figure 8).

Re claims 8 and 16. Wherein the method further comprises determining a time-to-perimeter measurement of the mobile platform to indicated an approximate time before the mobile platform will enter the satellite coverage region (column 2, lines 54-58).

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7. **Claims 4, 13, and 20** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hutchinson (US Patent No. 6,745,028) as modified by Parkman (US Publication No. 2002/0168971) as applied to claims 1, 12, and 18 above, and further in view of Ashton et al (US Patent No. 6,434,682).

The teachings of Hutchinson as modified by Parkman have been discussed above. Hutchinson as modified by Parkman fails to specifically teach: **(re claims 4 and 20)** wherein storing me coordinates in a database comprises at least one of: storing the coordinates in a look up table; and storing the coordinates in a link list; and **(re claim 13)** wherein the database includes at least one of a look up table and a link list.

Ashton et al teaches, at column 5, lines 14-17, that look up tables and linked lists are suitable and well known data structures for storing data.

In view of Ashton et al's teachings, it would have been obvious to one of ordinary skill in the art at the time of the invention to include, with the method and system as taught by Hutchinson as modified by Parkman, **(re claims 4 and 20)** wherein storing me coordinates in a database comprises at least one of: storing the coordinates in a look up table; and storing the coordinates in a link list; and **(re claim 13)** wherein the database includes at least one of a look up table and a link list; since Ashton et al teaches that these data structures are suitable and well known for storing data.

8. **Claims 9-11, 17, and 23-25** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hutchinson (US Patent No. 6,745,028) as modified by Parkman (US

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Publication No. 2002/0168971) as applied to claims 1, 12, and 18 above, and further in view of Satapathy (US Patent No. 7,072,641).

The teachings of Hutchinson as modified by Parkman have been discussed above. Hutchinson as modified by Parkman fails to specifically teach: **(re claims 9 and 23)** wherein the method further comprises mapping a plurality of signal strength data for the satellite coverage region; **(re claims 10, and 24)** wherein the method further comprises: identifying signal fade areas within the satellite coverage region utilizing the signal strength data; and determining the proximity of the mobile platform to the fade area; **(re claims 11 and 25)** wherein the method further comprise: identifying an edge effect area within the satellite coverage region utilizing the signal strength data; and determining the proximity of the mobile platform to the edge effect area; and **(re claim 17)** wherein the on board server is further adapted to: map a plurality of signal strength data throughout the satellite coverage region; identify a fade area within the satellite coverage region where the signal strength is significantly weaker than an average signal strength throughout the satellite coverage region; and determine the proximity of the mobile platform to the fade area.

Satapathy teaches, at Figure 6, column 7, lines 45-53, and column 9, lines 39-45, that knowing the areas which have poor reception in a cell based network is useful for informing a user when they will likely lose their connection based on their location and direction of movement.

In view of Satapathy's teachings, it would have been obvious to one of ordinary skill in the art at the time of the invention to include, with the method and system as

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taught by Hutchinson as modified by Parkman, **(re claims 9 and 23)** wherein the method further comprises mapping a plurality of signal strength data for the satellite coverage region; **(re claims 10, and 24)** wherein the method further comprises: identifying signal fade areas within the satellite coverage region utilizing the signal strength data; and determining the proximity of the mobile platform to the fade area; **(re claims 11 and 25)** wherein the method further comprise: identifying an edge effect area within the satellite coverage region utilizing the signal strength data; and determining the proximity of the mobile platform to the edge effect area; and **(re claim 17)** wherein the on board server is further adapted to: map a plurality of signal strength data throughout the satellite coverage region; identify a fade area within the satellite coverage region where the signal strength is significantly weaker than an average signal strength throughout the satellite coverage region; and determine the proximity of the mobile platform to the fade area; since Satapathy teaches storing a map of poor reception areas to inform a user when they are heading out of a covered area. It would be obvious to treat these poor reception areas the same way as the vertices of Hutchinson since crossing the boundary into a poor reception area is equivalent to leaving a cell. Additionally it would be obvious to perform these operations onboard the mobile platform since Parkman teaches that the coverage region database is maintained by the mobile system at paragraph [0032].

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Tayloe et al (US Patent No. 6,192,240) also determines the amount of time until a user will lose a signal based on location and the shape of a cell at Figures 2 and 3 and column 3, lines 44-62. Miller et al (US Patent No. 5,956,644) teaches at column 12, line 61 through column 13, line 2 that a time is determined based on the signal strength and roll off patterns of a cell.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SPENCER PATTON whose telephone number is (571)270-5771. The examiner can normally be reached on Monday-Thursday 7:30-5:00; Alternating Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Khoi Tran can be reached on (571)272-6919. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/SPENCER PATTON/
Examiner, Art Unit 3664

10/16/2009
/KHOI TRAN/
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